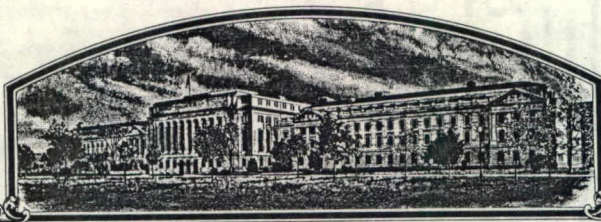


No.

8300158



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

John Bodger & Sons Company

Whereas, THERE HAS BEEN PRESENTED TO THE
Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (1930, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

MARIGOLD

'Pumpkin Crush Improved'



Attest:

Kenneth H. ...
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington this 30th day of November in the year of our Lord one thousand nine hundred and eighty-four.

John N. Block

Secretary of Agriculture

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

1. NAME OF APPLICANT(S) JOHN BODGER & SONS COMPANY		2. TEMPORARY DESIGNATION na	3. VARIETY NAME Pumpkin Crush Improved	
4. ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) P.O. Box 5090 El Monte, California 91734		5. PHONE (Include area code) 213-442-6161		FOR OFFICIAL USE ONLY PVPO NUMBER 8300158
6. GENUS AND SPECIES NAME Tagetes erecta	7. FAMILY NAME (Botanical) compositae		FILING DATE 7/28/83 TIME 8:30 <input checked="" type="checkbox"/> A.M. <input type="checkbox"/> P.M.	AMOUNT FOR FILING \$ 1,000 DATE 7/28/83 AMOUNT FOR CERTIFICATE \$ 500.00 DATE 10/29/84
8. KIND NAME Marigold		9. DATE OF DETERMINATION		
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Corporation				
11. IF INCORPORATED, GIVE STATE OF INCORPORATION California			12. DATE OF INCORPORATION February 7, 1912	
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS Howard Bodger P.O. Box 5090 El Monte, California 91734				

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED

- a. ☒ Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.)
- b. ☒ Exhibit B, Novelty Statement
- c. ☒ Exhibit C, Objective Description of the Variety (Request form from Plant Variety Protection Office.)
- d. ☒ Exhibit D, Additional Description of the Variety

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act.) ☐ Yes (If "Yes," answer items 16 and 17 below) ☒ No

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? ☐ Yes ☐ No

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? ☐ Foundation ☐ Registered ☐ Certified


18. DID THE APPLICANT(S) FILE FOR PROTECTION OF THE VARIETY IN THE U.S. OR OTHER COUNTRIES? ☐ Yes (If "Yes," give names of countries and dates) ☒ No

19. HAVE RIGHTS BEEN GRANTED IN THE U.S. OR OTHER COUNTRIES? ☐ Yes (If "Yes," give names of countries and dates) ☒ No

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT JOHN BODGER & SONS CO. PRESIDENT	DATE July 13, 1983
SIGNATURE OF APPLICANT 	DATE 1

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14 A (1)

ORANGE SEGREGATE IN DOLLY MIX

S₁-S₇ LARGE FLOWERED ORANGE PLANT

SELECTED AND SELFED OF SEVEN GENERATIONS



LARGE FLOWERED ORANGE SIB MATED



PUMPKIN CRUSH IMPROVED

14 A (2)

After the initial sib-mating to increase the seed for planting the seed was increased in the field by bulking seed harvested from open pollinated plants. Off types such as off colors and taller plants were removed from the field before they could shed pollen.

(3)

The main variants observed during reproduction and multiplication were off colors, slightly taller plants, smaller flowers and single flowered plants all of which occurred at a frequency of less than .01%.

(4)

In a production field of over 25,000 plants to provide seed for sale off types appeared at a frequency of less than .01%.

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(14B)

Novelty of Pumpkin Crush Improved is based on the variety being less responsive to long days thus it will bloom earlier and more profusely under long days than Pumpkin Crush as is demonstrated in Figure 1. Days to bloom from seeding will vary depending on the seeding date. When Pumpkin Crush Improved is sown under short day conditions it is approximately 5 days earlier than Pumpkin Crush to bloom. However, when seeded under long day conditions there is an approximate 10 day difference in bloom between Pumpkin Crush Improved and Pumpkin Crush. Flower size is also larger with Pumpkin Crush Improved being approximately 1 cm larger than Pumpkin Crush when grown under various conditions.

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OBJECTIVE DESCRIPTION OF VARIETY
MARIGOLD (TAGETE)

INSTRUCTIONS - See Reverse.

NAME OF APPLICANT(S) JOHN BODGER & SONS COMPANY	FOR OFFICIAL USE ONLY
ADDRESS (Street and No., or R.F.D. No.; City, State, and ZIP Code) P.O. Box 5090 El Monte, California. 91734	PVPO NUMBER 8300158
	VARIETY NAME OR TEMPORARY DESIGNATION PUMPKIN CRUSH IMPROVED

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. or) when number is either 99 or less or 9 or less.

1. SPECIES TYPE:

- 1 = ERECTA (African) 2 = PATULA (French) 3 = TENUIFOLIA (Signata) 4 = LUCIDA (Sweet)
5 = OTHER (Specify) _____

2. FLOIDY:

- 1 = DIPLOID (n = 12) 2 = TRIPLOID (n = _____) 3 = TETRAPLOID (n = _____)

3. PLANT TYPE/HABIT:

- 1 = EXTRA DWARF (Miniature, petite) < 20 CM. 2 = DWARF 25-35 CM. 3 = SEMIDWARF 40-55 CM. 4 = TALL > 60 CM.
 1 = ERECT 2 = SEMIERECT 3 = DECUMBENT
 1 = COMPACT 2 = LAX
 Flowering: 1 = LONG SEASON 2 = SHORT SEASON

4. LEAF (Middle of first flowering branch):

- Type: 1 = SIMPLE 2 = COMPOUND
 Leaflet: 1 = OVATE 2 = LANCEOLATE 3 = ELLIPTIC 4 = FILIFORM
 Margin: 1 = ENTIRE 2 = CRENATE 3 = SERRATE 4 = DENTATE 5 = INCISED
 CM. LONG MM. WIDE Anthocyanin pigment in petioles: 1 = ABSENT 2 = PRESENT
 Glands: 1 = PUNCTATE 2 = LARGE DOTS Glands: 1 = BASAL 2 = APICAL
 Odor: 1 = NONE 2 = MILD FRAGRANCE 3 = STRONG FRAGRANCE 4 = MILD "MARIGOLD" 5 = STRONG "MARIGOLD"

5. STEM:

- 1 = STRAIGHT 2 = ZIGZAG 1 = BRITTLE 2 = FLEXIBLE
 Anthocyanin: 1 = ABSENT 2 = ALONG VEINS ONLY 3 = SOLID COLORATION CM. FROM BASE OF STEM TO INVOLUCRE OF TERMINAL FLOWER
 CM. FROM BASE OF MAIN STEM TO AXIL OF TOP BRANCH CM. FROM AXIL OF TOP BRANCH TO INVOLUCRE OF TERMINAL FLOWER
 NO. OF INTERNODES BELOW FIRST BRANCH NO. OF FIRST ORDER BRANCHES (from main stem)

6. FLOWER:

- Type: 1 = CARNATION 2 = CHRYSANTHEMUM 3 = OTHER _____
 1 = SINGLES 2 = DOUBLES
 Silhouette: 1 = FLATTENED 2 = ROSETTE 3 = GLOBULAR
 Odor: 1 = NONE 2 = MILD FRAGRANCE 3 = STRONG FRAGRANCE 4 = MILD "MARIGOLD" 5 = STRONG "MARIGOLD"

6. FLOWER: (Continued)

☐ Ray: 1 = FLATTENED 2 = CURLED/TWISTED (*Fantastic*)
☐ Apices: 1 = ENTIRE 2 = LOBED 3 = NOTCHED
☐ SURFACE - Dorsal: }
☐ SURFACE - Ventral: } 1 = GLABROUS 2 = PUBESCENT 3 = PUBESCENT ON APICE ONLY
☐ LUSTER - Dorsal: }
☐ LUSTER - Ventral: } 1 = SHINY 2 = DULL
☐ PATTERN - Dorsal: } 1 = SOLID 2 = SPOTTED 3 = STRIPED
☐ PATTERN - Ventral: } 4 = PICOTEE 5 = OTHER (*Specify*) _____
☐ Color: 1 = SOLID 2 = BICOLOR (*Specify colors*): Primary orange 23A Secondary _____
 State color standards used: RHS Color Chart

 SIZE (Use outer row of first matured flower): ☐ ☐ MM. LONG ☐ ☐ MM. WIDE

☐ Disc: 1 = ABSENT 2 = PRESENT, COVERED 3 = PRESENT, UNCOVERED
☐ Type: 1 = NOT QUILLED 2 = QUILLED

7. DISEASE RESISTANCE (0 = Not Tested; 1 = Susceptible; 2 = Resistant)

<input type="checkbox"/> ROOT-ROT (<i>Phytophthora</i>)	<input type="checkbox"/> VIRUS YELLOWS
<input type="checkbox"/> GREY MOLD (<i>Botrytis</i>)	<input type="checkbox"/> FUSARIUM WILT
<input type="checkbox"/> STEM ROT (<i>Sclerotinia</i>)	<input type="checkbox"/> WITCHES BROOM

8. INDICATE A VARIETY THAT MOST NEARLY RESEMBLE THAT SUBMITTED

CHARACTER	VARIETY	CHARACTER	VARIETY
Plant shape	Pumpkin Crush	Flower size	Pumpkin Crush
Plant size	Pumpkin Crush	Flower shape	Pumpkin Crush
Foliage	Pumpkin Crush	Flower color	Pumpkin Crush

INSTRUCTIONS

REFERENCES: The following publications may be used as a reference aid for completing this form:

- (a) Bailey, L. H., 1949, Manual of Cultivated Plants, MacMillan.
- (b) Royal Horticulture Society, 1965, Dictionary of Gardening, Oxford.
- (c) Wyman, Donald, 1971, Wyman's Gardening Encyclopedia, MacMillan.

COLOR: Nickerson's or any recognized color fan may be used to determine the colors.

(14D)

Although Pumpkin Crush Improved closely resembles Pumpkin Crush in overall appearance there are several differences. Figure 2 demonstrates that not only did Pumpkin Crush Improved bloom earlier from a February 23 sowing date which is under short day conditions, but it was also more uniform to bloom than Pumpkin Crush. Pumpkin Crush Improved is also more compact as from an early June sowing. Pumpkin Crush was 16.5 cm tall from the soil line to the base of the first flower while Pumpkin Crush was only 12.75 cm tall. Flower size is different for the two varieties as illustrated in the enclosed silhouettes, while flower shape and foliage are similar. Flower color was also similar with both varieties being 23A on the Royal Horticultural Society Color Chart.

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Figure 1: Marigold Pumpkin Crush (left) and Marigold Pumpkin Crush Improved (right) illustrating flowering response under long day conditions.

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Figure 2: Marigold Pumpkin Crush (left) and Marigold Pumpkin Crush Improved (right) illustrating uniformity of flowering in cell packs under greenhouse conditions.

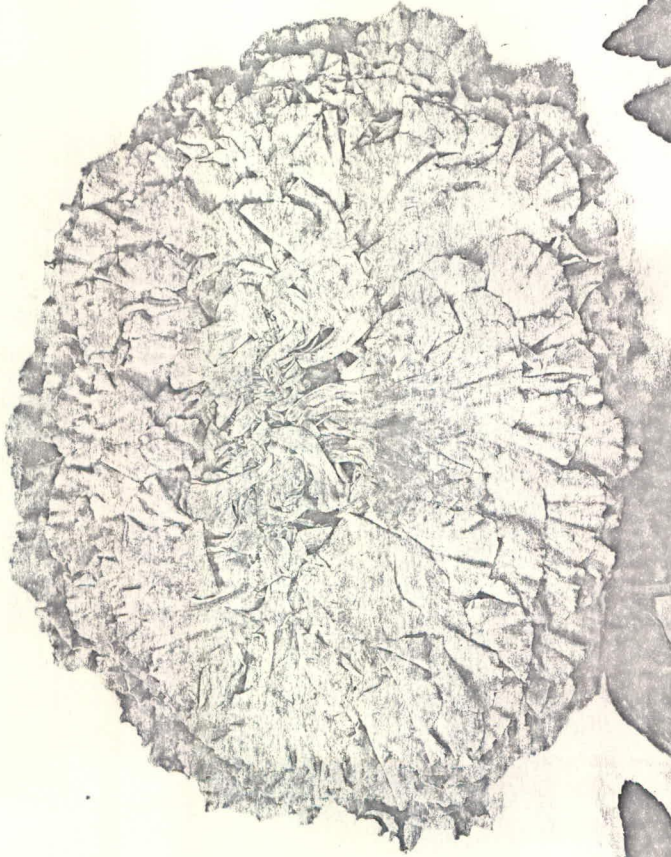
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MARI GOLD PUMPKIN CRUSH IMPROVED



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MARI GOLD PUMPKIN CRUSH



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